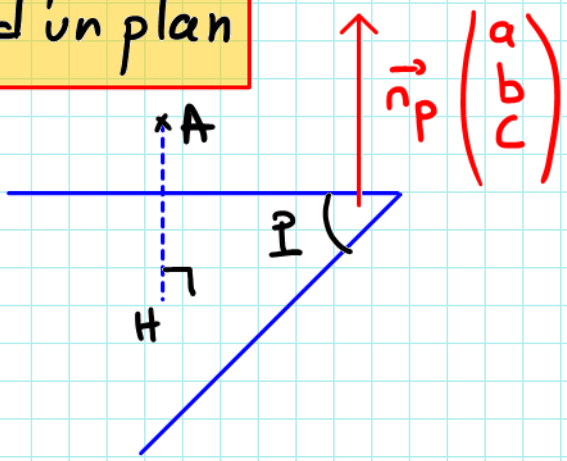
Distance d'un point et d'un plan

$A(x_A, y_A, z_A)$

$P : ax + by + cz + d = 0$



$$d(A, P) = \frac{|P_A|}{\|\vec{n}_P\|}$$ avec $P_A = ax_A + by_A + cz_A + d$.

et $\vec{n}_P \begin{pmatrix} a \\ b \\ c \end{pmatrix}$

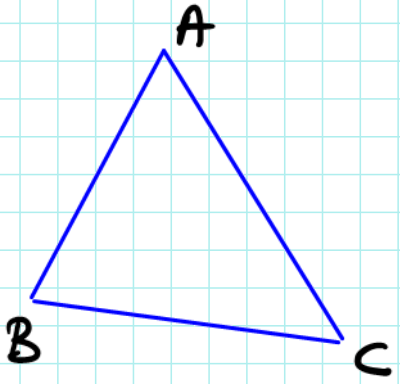
Exemple :

$A(1, -2, 1)$ et $P : x - 3y + 2z - 1 = 0$

$$d(A, P) = \frac{|1 - 3\times(-2) + 2\times 1 - 1|}{\sqrt{1^2 + 3^2 + 2^2}} = \frac{8}{\sqrt{14}} = \frac{4\sqrt{14}}{7}$$

Orthogonalité

* $\vec{u} \cdot \vec{v} = 0 \Leftrightarrow \vec{u} \perp \vec{v}$.

Aires

- $\mathcal{A}(ABC) = \frac{1}{2} \|\overrightarrow{AB} \wedge \overrightarrow{AC}\|$.